POSTED 04/05/2000

FIG. 1

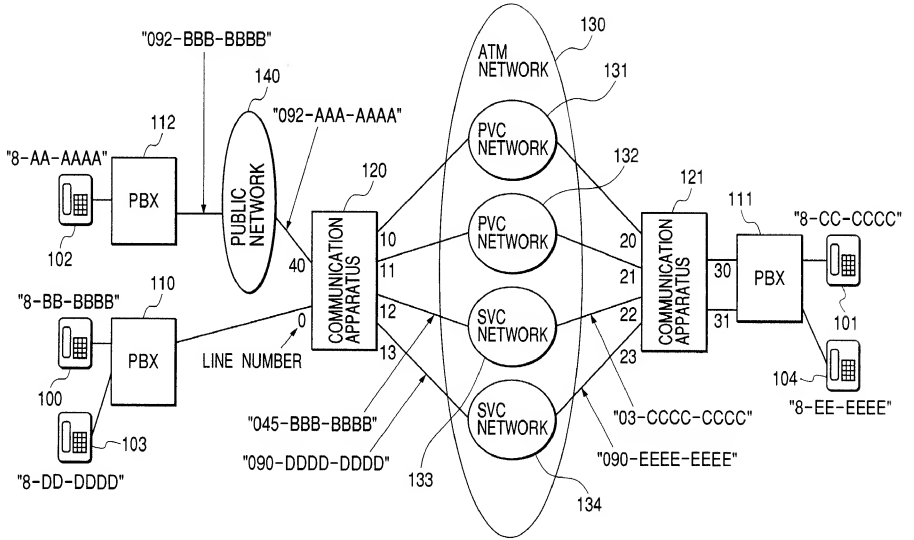


FIG. 2

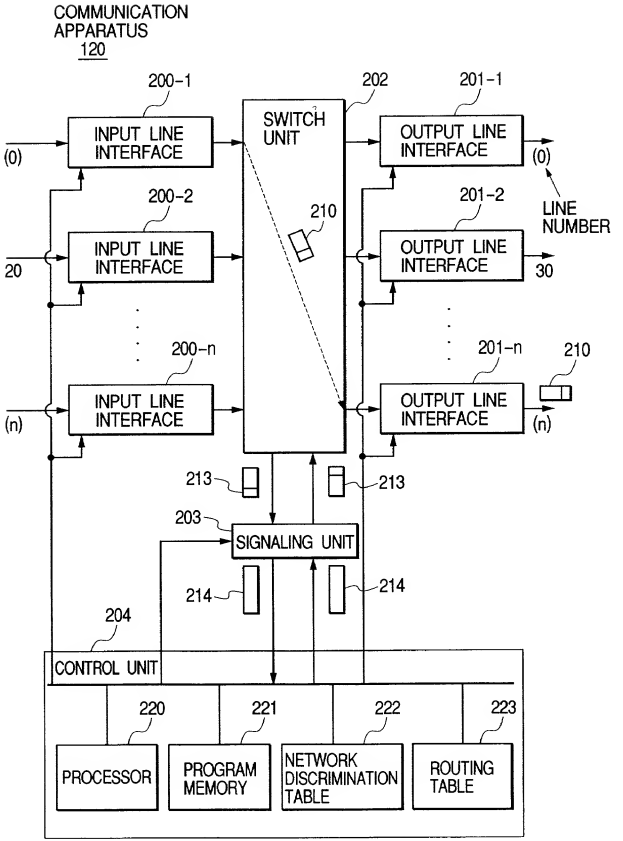

COMMUNICATION APPARATUS
120
200-1
INPUT LINE INTERFACE
(0)
200-2
INPUT LINE INTERFACE
20
200-n
INPUT LINE INTERFACE
(n)
202
SWITCH UNIT
210
213
213
203
SIGNALING UNIT
214
214
204
CONTROL UNIT
220
PROCESSOR
221
PROGRAM MEMORY
222
NETWORK DISCRIMINATION TABLE
223
ROUTING TABLE
201-1
OUTPUT LINE INTERFACE
(0)
201-2
OUTPUT LINE INTERFACE
30
201-n
OUTPUT LINE INTERFACE
(n)
210
LINE NUMBER

FIG. 3

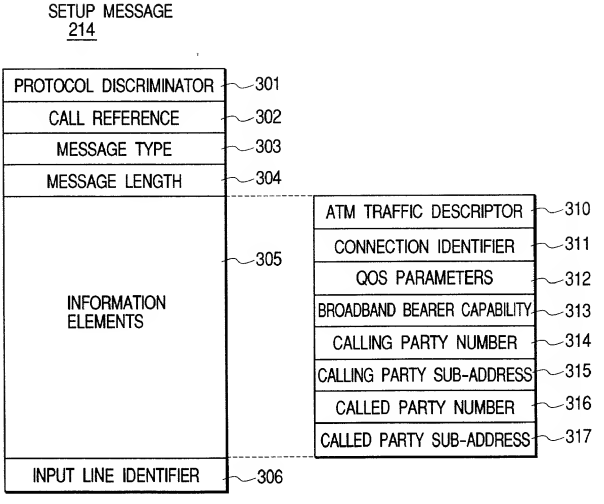

SETUP MESSAGE
214
PROTOCOL DISCRIMINATOR
301
CALL REFERENCE
302
MESSAGE TYPE
303
MESSAGE LENGTH
304
INFORMATION ELEMENTS
305
INPUT LINE IDENTIFIER
306
ATM TRAFFIC DESCRIPTOR
310
CONNECTION IDENTIFIER
311
QOS PARAMETERS
312
BROADBAND BEARER CAPABILITY
313
CALLING PARTY NUMBER
314
CALLING PARTY SUB-ADDRESS
315
CALLED PARTY NUMBER
316
CALLED PARTY SUB-ADDRESS
317

FIG. 4

NETWORK DISCRIMINATION TABLE 222A

222-1 INPUT LINE NUMBER	222-2 TYPE OF INCOMING NETWORK	222-3 CONVERSION ADDRESS
0	PBX	
10	PVC NETWORK 131	
11	PVC NETWORK 132	
12	SVC NETWORK 133	
13	SVC NETWORK 134	
⋮	⋮	⋮
40	PUBLIC NETWORK	8CCCCCC

FIG. 5

ROUTING TABLE 223A

223-1 CALLED PARTY NUMBER	223-2 OUTPUT LINE NUMBER	223-3 LOGICAL OUTPUT LINE NUMBER	223-4 ADDRESS CONVERSION FLAG	223-5 CONVERSION ADDRESS	223-6 STATUS OF OUTGOING NETWORK	223-7 TYPE OF OUTGOING NETWORK
8BBBBBB	0	0	OFF		NORMAL	PBX
8CCCCCC	12	120	ON	03CCCCCCCC	ABNORMAL	SVC NETWORK 133
8EEEEEE	11	110	OFF		NORMAL	PVC NETWORK 132
8CCCCCC	13	130	ON	090EEEEEEE	NORMAL	SVC NETWORK 134
8CCCCCC	10	100	OFF		NORMAL	PVC NETWORK 131
⋮	⋮	⋮	⋮	⋮	⋮	⋮
8AAAAAA	40	140	ON	090BBBBBBB	NORMAL	PUBLIC NETWORK

FIG. 6

NETWORK DISCRIMINATION TABLE 222B

222-1 INPUT LINE NUMBER	222-2 TYPE OF INCOMING NETWORK	222-3 CONVERSION ADDRESS
20	PVC NETWORK 131	
21	PVC NETWORK 132	
22	SVC NETWORK 133	
23	SVC NETWORK 134	
⋮	⋮	⋮
30	PBX	

FIG. 7

ROUTING TABLE 223B

223-1 CALLED PARTY NUMBER	223-2 OUTPUT LINE NUMBER	223-3 LOGICAL OUTPUT LINE NUMBER	223-4 ADDRESS CONVERSION FLAG	223-5 CONVERSION ADDRESS	223-6 STATUS OF OUTGOING NETWORK	223-7 TYPE OF OUTGOING NETWORK
8AAAAAA	20	200	OFF		NORMAL	PVC NETWORK 131
8BBBBBB	21	210	OFF		NORMAL	PVC NETWORK 132
8BBBBBB	22	220	ON	045BBBBBBBB	NORMAL	SVC NETWORK 133
8BBBBBB	23	230	ON	090DDDDDDDD	NORMAL	PVC NETWORK 134
⋮	⋮	⋮	⋮	⋮	⋮	⋮
8CCCCCC	30	300	OFF		NORMAL	PBX
8EEEEEE	31	310	OFF		NORMAL	PBX

FIG. 8

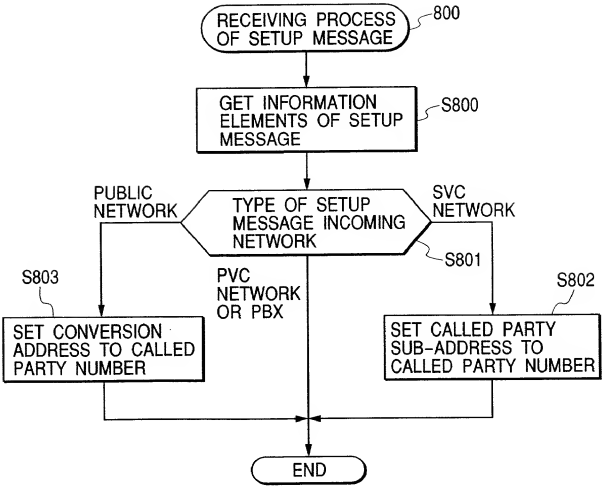

RECEIVING PROCESS OF SETUP MESSAGE
800
GET INFORMATION ELEMENTS OF SETUP MESSAGE
S800
PUBLIC NETWORK
TYPE OF SETUP MESSAGE INCOMING NETWORK
SVC NETWORK
S801
S803
PVC NETWORK OR PBX
S802
SET CONVERSION ADDRESS TO CALLED PARTY NUMBER
SET CALLED PARTY SUB-ADDRESS TO CALLED PARTY NUMBER
END

FIG. 9

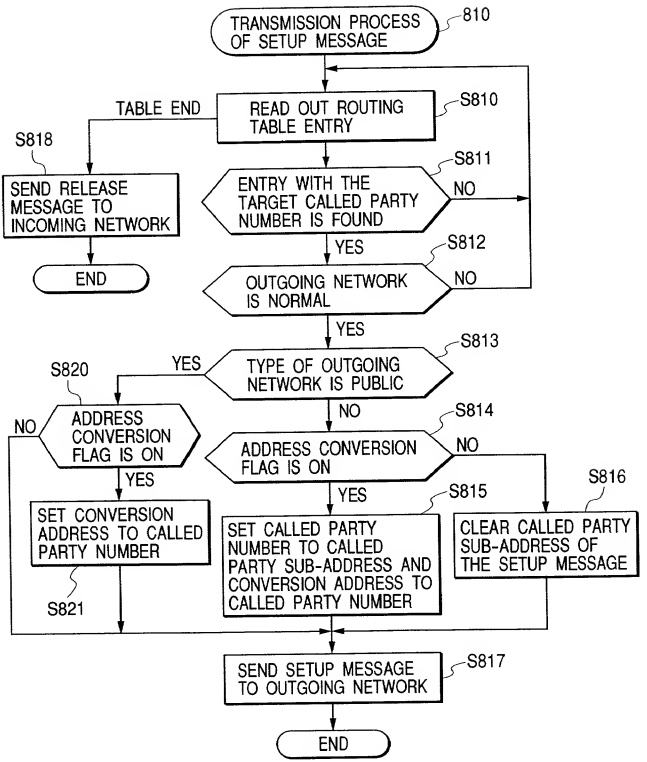

TRANSMISSION PROCESS OF SETUP MESSAGE
810
READ OUT ROUTING TABLE ENTRY
S810
TABLE END
S818
SEND RELEASE MESSAGE TO INCOMING NETWORK
END
ENTRY WITH THE TARGET CALLED PARTY NUMBER IS FOUND
S811
NO
YES
OUTGOING NETWORK IS NORMAL
S812
NO
YES
TYPE OF OUTGOING NETWORK IS PUBLIC
S813
YES
S820
NO
ADDRESS CONVERSION FLAG IS ON
S814
NO
YES
SET CONVERSION ADDRESS TO CALLED PARTY NUMBER
S821
ADDRESS CONVERSION FLAG IS ON
YES
SET CALLED PARTY NUMBER TO CALLED PARTY SUB-ADDRESS AND CONVERSION ADDRESS TO CALLED PARTY NUMBER
S815
CLEAR CALLED PARTY SUB-ADDRESS OF THE SETUP MESSAGE
S816
SEND SETUP MESSAGE TO OUTGOING NETWORK
S817
END

FIG. 10

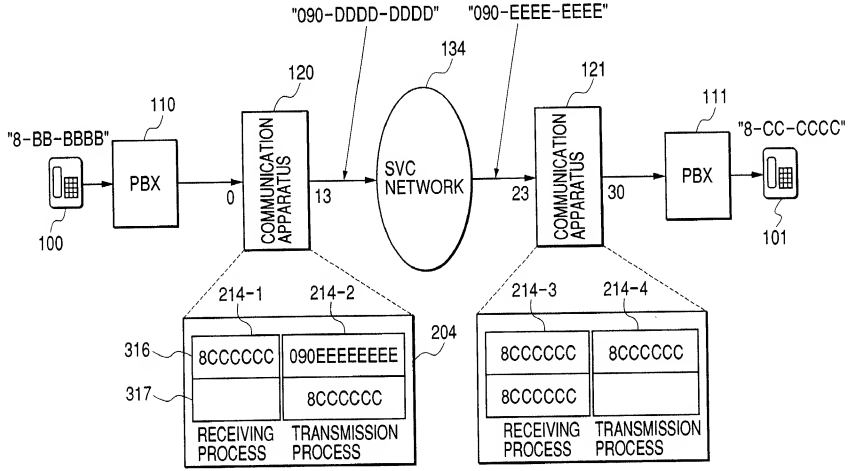

"090-DDDD-DDDD"
"090-EEEE-EEEE"
134
120
121
110
111
"8-BB-BBBB"
"8-CC-CCCC"
PBX
COMMUNICATION APPARATUS
SVC NETWORK
COMMUNICATION APPARATUS
PBX
0
13
23
30
100
101
214-1
214-2
214-3
214-4
316
317
204
8CCCCCC
090EEEEEEEE
8CCCCCC
8CCCCCC
8CCCCCC
8CCCCCC
RECEIVING PROCESS
TRANSMISSION PROCESS
RECEIVING PROCESS
TRANSMISSION PROCESS

FIG. 11

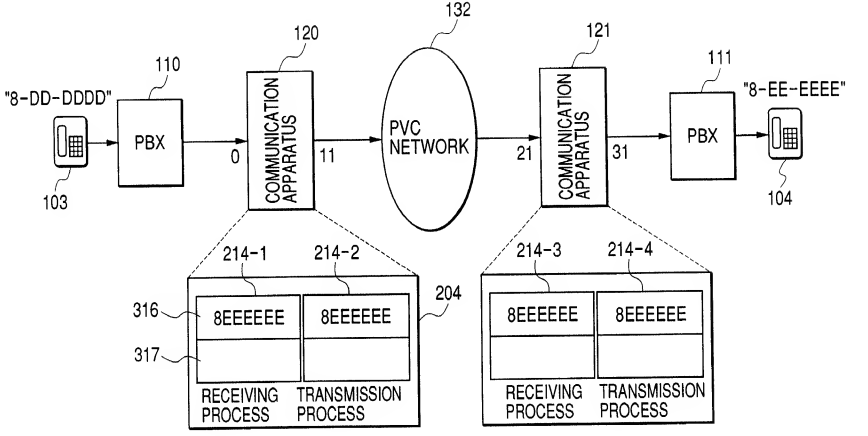

"8-DD-DDDD"
103
110
PBX
120
COMMUNICATION APPARATUS
0
11
132
PVC NETWORK
121
COMMUNICATION APPARATUS
21
31
111
PBX
"8-EE-EEEE"
104
214-1
214-2
316
317
8EEEEEE
8EEEEEE
204
RECEIVING PROCESS
TRANSMISSION PROCESS
214-3
214-4
8EEEEEE
8EEEEEE
RECEIVING PROCESS
TRANSMISSION PROCESS

FIG. 12

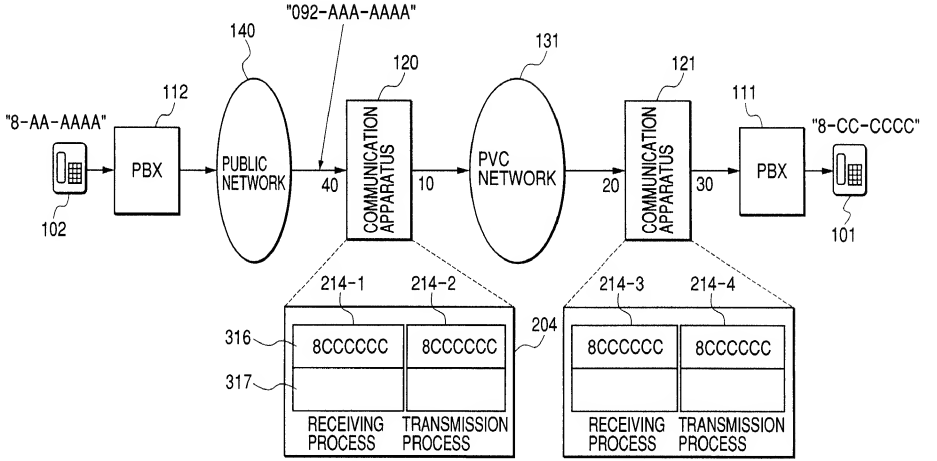
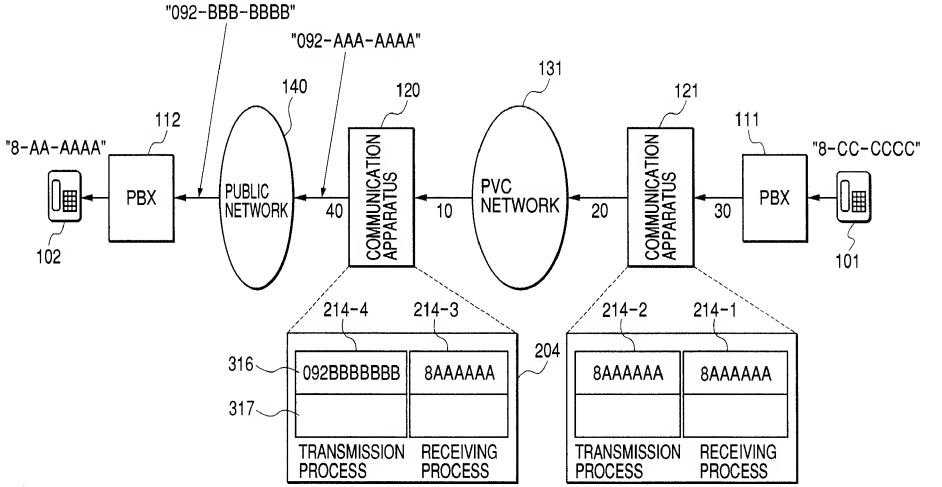

"092-AAA-AAAA"
140
131
120
121
112
111
"8-AA-AAAA"
"8-CC-CCCC"
PBX
PUBLIC NETWORK
COMMUNICATION APPARATUS
PVC NETWORK
COMMUNICATION APPARATUS
PBX
102
40
10
20
30
101
214-1
214-2
214-3
214-4
316
317
204
8CCCCCC
RECEIVING PROCESS
TRANSMISSION PROCESS

FIG. 13


"092-BBB-BBBB"
"092-AAA-AAAA"
140
120
131
121
112
111
"8-AA-AAAA"
"8-CC-CCCC"
PBX
PUBLIC NETWORK
COMMUNICATION APPARATUS
PVC NETWORK
COMMUNICATION APPARATUS
PBX
102
40
10
20
30
101
214-4
214-3
214-2
214-1
316
317
092BBBBBBB
8AAAAAA
8AAAAAA
8AAAAAA
204
TRANSMISSION PROCESS
RECEIVING PROCESS
TRANSMISSION PROCESS
RECEIVING PROCESS